

Challenges of Organizing Private Forest Owners in Serbia

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Abstract Small-scale forestry in Serbia is characterized by high fragmentation of properties, a large number of parcels and forest owners. Numerous activities for private forest owners in Serbia supported by the State, FAO and CEPF have resulted in an increased interest of owners in forming private forest owners' associations (PFOA). The goal of this paper is to explore preconditions that are necessary for organizing private forest owners in Serbia into effective associations. In order to reach this goal, results of PRIFORT project were used. The over-arching research questions of this paper are: "What is the level of interest among forest owners in forming owners' associations?"; "Why has forest owner interest in organizing developed so slowly?" and "What are the necessary preconditions for the development of private forest owners' organizations in the country?" In order to answer these questions, quantitative survey with 42 close, open and Likert scale questions

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was conducted. Sample size was determined following Malhotra's proportion method and, in total, 350 private forest owners, from nine municipalities were interviewed. Results of this paper show that majority of respondents are very little or not at all aware of existing legislation. Almost half of respondents consider that their interests are not represented well. Although about 50% of interviewed forest owners miss interest organization, only 0,3% are members of PFOA. More than 70% are ready to join association, if it would provide some economic advantages.

Keywords Small-scale forestry · Private forest owners · Forest owners' organizations · Forest policy

Introduction

Private forests cover some 1.058.400 ha, or approximately 47% of the Serbia's total forest area (The National forest inventory of the Republic of Serbia 2009). This private forest resource is owned by almost 0.8 million forest owners divided into approximately 3.9 million parcels (Nonic and Milijic 2008). In both their share of total forest and their structure, Serbian private forests resemble the larger European picture: numerous small-scale forest owners manage one-half of the total forest area in thousands of small parcels (Harisson et al. 2002; Wiersum et al. 2005; Hirsch et al. 2007).

The challenges associated with these forests are also similar to those of other European countries, including parcelization, forest fragmentation, and the challenges of helping an increasing number of private forest owners achieve forest policy goals, efficient forest management, and a range of ecological, social, and economic objectives (FAO 2000; Wiersum et al. 2005; Mizaraite and Mizaras 2005; Schlueter and Schraml 2006). This highly fragmented ownership structure has been considered by state forest administrators, research institutions, and state forest management enterprises to be an impediment to private forest sector development in the former Yugoslavia during the socialist period (1944–1991) and in the last 18 years of transition (Damjanovic 1986; Nonic 2004; Nonic et al. 2008; Glück et al. 2009). A similar situation was and still is present throughout most of Central and Eastern Europe (Mantau 1981; Ottitsch 2001; Kittredge 2003, 2005; Schraml 2005; Schlueter and Schraml 2006; Hirsch et al. 2007; Bouriaud 2007).

Nonetheless, Serbian private forests compare favourably with large-scale state forests with respect to timber volume and growth as well as other ecological and social functions and benefits, so their importance as a resource should not be underestimated (Nonic and Milijic 2008). In the past decade scholars of small-scale forestry have begun to recognize strengths and advantages among small-scale forests and their owners which were formerly unrecognized or thought of as weaknesses and disadvantages, including diversity of objectives, independent action, and lack of "management" (Corten et al. 1999; Hoen et al. 2000; Bliss 2003; Rickenbach et al. 2004; Kittredge 2005; Bliss et al. 2009; Bliss and Kelly 2008). This newer perspective might as well encourage the development of the private forest sector in Serbia if supported adequately by state policy and administrative

structure (Hodapp 1972; Brandl 1975, 1977; Nießlein 1976; Schmidt 1994; Schraml 2005; Corten et al. 1999; Kittredge 2005).

Organizations of private forest owners represent an efficient forest policy instrument aimed at solving the prevailing problems of small-scale forest management (Schraml 2005). Different organizational models of forest owners' organizations exist around the world and they are the consequence of different factors affecting their development. Those factors have determined different activities and efficiency of forest owners' organizations. Organizations with a long tradition, such as forest cooperatives in Korea or forest owners' associations in Scandinavian countries contrast with respect to membership rate and efficiency with relatively younger organizations in America or in post communist countries of Eastern Europe, while forest owners' organizations in Central European countries are somewhere in between (Mantau 1981; Ottitsch 2001; Kittredge 2003, 2005; Schraml 2005). However, in developed countries with a long tradition of cooperation between forest owners there are significant problems in the functioning of forest owners' organizations, which result in reduced efficiency (Schraml 2005), or in a failure to fulfill their policy goals. Even in countries which have successful private forest owners' organizations, all forest owners are not members (Kittredge 2005). In Finland, around 25% of forest owners do not participate in the work of their organizations (Koistinen 1998), in Sweden (Kittredge 2003), around half of all private forest owners are not members of private forest owners' associations (PFOA) and in Japan, around 33% of forest owners are not members of forest owners' cooperatives (1991). In Bavaria fewer than 30% of forest owners are members of such organizations (Beck and Spiegelhoff 1997).

Forest policy and organization in Serbia during the last 20 years has been built on a centralized institutional framework, as laid out in the previous *Law on Forests* (1991). Since Serbia started the process of political transition in 2000, the forest sector has not been fully reformed, especially with respect to deregulation and privatization. However, significant steps have been made in establishing a strategic and legislative framework for the development of forestry in general, culminating in the formulation of the Forest Development Strategy (2006) and Forest Law (2010). With those documents, the State has recognized the importance of the private forest sector. Numerous activities for private forest owners supported by the Serbian Directorate of Forests FAO and CEPF have resulted in an increased interest of owners in forming private forest owners' associations.

As in most of Central and Eastern Europe (FAO 2000; Schraml 2005; Kittredge 2005) PFOAs in Serbia are civil associations (Milijic 2007) and they aim at representing the interests of individual members as opposed to advocating joint forest management (Nonic et al. 2008). In May 2009 with the support from CEPF/PROFOR the Serbian Federation of Private Forest Owners' Associations (SFPFOA) was established. The main goals of the Federation are to promote local, regional, national and international cooperation between forest owners, to support establishing new local associations, and to facilitate links between forestry administration, public forest service and forest owners. Although the Federation is very young it is expected to eventually lead to further development of the private forest sector and improve the position of private forest owners in the development of forest policy

(Nonic et al. 2009). However, the umbrella organization of the Serbian forest owners has only 20 local associations as members. The total number of owners in those organizations is around 500. Given that there are 0.8 million private forest owners in Serbia, why are so few forest owners members of forest owners' associations?

Very little research has been conducted on the private forest sector in Serbia (Nonic 2004), and most of it has had a very narrow focus, however, most studies conclude that Serbian policy makers have never considered establishment of private forest owners' organizations to be part of a systematic solution (Damjanovic 1986; Nonic 2004). In addition, policy makers have not adequately considered the necessity of being responsive to forest owners' interests and needs. An exception is "Research into the organization of private forest owners in the Western Balkan region" (PRIFORT),¹ conducted in the period of 2007–2009 in Bosnia and Herzegovina, Croatia, Macedonia and Serbia. That project focused on the absence and slow development of voluntary forest owners' organizations in those countries, during the two decades during which those countries transitioned from planned to market economies, from socialist to democratic systems, from state property ownership to state and private property, and dealt with the process of restitution.

Given the dearth of research on this forest ownership sector, and the difficulty of contacting private forest owners where no landowner lists are available and internet access is very limited, we adopted a straight forward, basic household survey approach. Our goal is to analyse the necessary preconditions for organizing private forest owners in Serbia into effective associations. We present basic socio-economic characteristics of private forest owners, forest management and production characteristics of private forest properties and perspectives of private forest owners toward administrative and legal regulations.

Historical Background

Serbia as a country began to exist in the eleventh century as a Kingdom, and Empire later on during the fourteenth century at the peak of its power. From the fifteenth century it was occupied by the Ottomans and it gained its independence during the first half of the nineteenth century. From the second half of the nineteenth century Serbia was a Kingdom until the end of World War I when the Kingdom of Yugoslavia was established as a country of Serbs, Croats and Slovenians (Petranovic 1988). Regions populated by Slavic origin nations, which were ruled by the Austro-Hungarian Empire were united with Serbian territories and the country of Yugoslavia was established. From World War II to the nineteen nineties Yugoslavia continued to exist as a Federation of Socialist Republics: Serbia, Croatia, Slovenia, Macedonia, Bosnia and Herzegovina, and Montenegro (Dimic and Lj 1998; Krizman 1977). At the end of the last century and the beginning of this century all the mentioned countries gained independence as democratic republics.

¹ <http://www.efi.int/portal/research/projects/?todo=3&projectid=18>

The development of property relations in Serbian forestry (Nonic 2004) and their organisation is the result of historic events. The forms of property and their modifications are closely related to the forms and changes of socio-economic relations in Serbia during its formation and development as a state. Various forms of property had different times of formation and different developments during the nineteenth century.

After the period of state forests, the development of forest property in Serbia brought about new forms of property, first of all private, communal, and rural tenure starting by the end of the first half of the nineteenth century, after Serbian liberation from the Ottoman empire. The original private and communal ownership of forests in Serbia occurred by forced occupation and capture of public property. This process dominated the first decades of restored Serbia, and persisted until the end of the nineteenth century. A more complete legal regulation of private property occurred in the early 1870s. Already with the Forest Regulations in 1861 four categories of property had been established: state, public, communal, and private forests.

The opening article of the first Serbian Forest Law of 1891 says: "... forests (mountains, hills,) in Serbia are state, community, monastery, church, or private", which indicates that this Law introduced two new categories of ownership: community and church property (Law on Forests 1920). In 1920 the previously-called public forests were referred to as state-owned forests. There were 37% state forests, 43% community, 1% forests belonging to monasteries and churches, and 19% private forests (Marinovic 1923). In private forests, harvesting was allowed without any permits, at the owner's own discretion, except in the cases of protected forests, which were regulated by a special procedure.

The question of development of forest property rights in Serbia was not completely settled before the Second World War. In the first official statistical publication of the Kingdom of Serbs, Croats and Slovenians on Forestry published by the Ministry of Forestry in 1926, the division of forests was made based on ownership and soil type. Three main categories of ownership of the forests in the entire Kingdom were distinguished: state owned (47.7%), communal (19%) and private (33.3%).

The Forest Law of the Kingdom of Yugoslavia of 1929 classified forests into (Art. 1): state owned forests and forests not owned by the state. The latter were (Art. 4): "...forests of self-managing bodies, tribal forests, forests as property of communities, land communities and similar corporations, as well as all private forests" (Law on Forests 1930). In 1938 the first reliable statistical data on forestry funds were processed. According to those (Statistic of forests and forest commerce for 1938, 1940) the property structure of forests in Serbia (of the total of 1.561.000 ha) was as follows: state forests 323.000 ha (21%), monastery and fund forests 29.000 ha (2%), community forests 501.000 ha (32%), and private forests 708.000 ha (45%) as dominant ownership form. It was a characteristic of forestry-police regulations that they referred to all forests, regardless of the status of ownership, so harvesting or changing land use without government's permission was prohibited.

In the communist period following World War II, there were great social changes of the state system and the system of ownership and the legal and property structure of forests. The first step in this direction was the establishment of socially—owned property, or public forests originating from state-owned, communal, monastery and church forests (1946). Forest properties were nationalized according to the *Federal Law on Agricultural Reform and Colonization* (1946, Art. 3, 10, 26). All of these forest properties were transferred to state ownership. Forestland previously owned by individuals considered war criminals or German collaborators was also nationalized. Moreover, in 1946 all properties larger than a prescribed maximum size (45 ha) were nationalized without compensation. On the other hand, those properties smaller than the agrarian minimum remained private and became more fragmented through inheritance in subsequent years.

Colonized farmers who previously did not have any land property became forest owners and forest cooperatives were established for forest management improvement (Nonic 2004). According to the Inventory of the forest fund 1979 (1983) it can be concluded that in Serbia, in the period after World War II, there were predominantly two categories of forest ownership: public (49.43%) and private (50.57%).

Unlike in most Eastern European countries during the period after the World War II, private forests remained as an ownership form in all republics of the former Yugoslavia and in Serbia they were the dominant ownership category. However, the private and state forest sectors in Serbia have not developed equally, with the result that forest conditions are very different between the two sectors. According to Damjanovic: "... throughout the post war period two parallel forest policies have been practiced—one according to the social sector of forestry by which this sector through a gradual reorganization liberated itself of administrative restraints. The second policy—the sector of the private forests remained essentially unchanged, because their control remained the responsibility of the government. During the numerous reorganizations and self-management transformations of the entire society, only the form of control had been changed; the responsibility was transferred from county councils to municipalities. The legal sector of forestry was not consecutively developed with the social sector, as was necessary" (Damjanovic 1986).

Today, property relations in Serbia are developing and data on ownership structure are changing as we speak. Some phases of the restitution process have started, such as passing of the *Law on Restitution of property to churches and religious communities* (2006) and the *Law on Evidence of confiscated property* (2005). Almost 8.000 ha of forest land have been returned to the Serbian Orthodox Church, and since this is an ongoing process it is expected that additional thousands of hectares will be returned to churches and religious communities in the years to come (Nonic et al. 2009).

Landowners other than the church have yet to be addressed in the restitution process. However, as The Republic of Serbia is more fully integrated into the EU, it is expected that the restitution process will be broadened, leading to an increase in the area of private forest (Glück et al. 2009).

Theoretical Background

To understand the social dynamics governing voluntary organizations such as landowner associations we turn to relevant social theory. According to group theory, people with shared interests associate with each other in order to advance those interests (Bentley 1949; Latham 1952). However, the theory of collective action suggests that small and large groups behave differently (Olson 1965). Members of large groups, like private forest owners in Serbia, do not see it in their self-interest to provide collective goods at their own expense. They thus often act as “*free riders*” by enjoying the collective goods provided at the expense of others. In other words, members of large organizations often fail to recognize the need to share the burden of providing for the collective good. Moreover, individual members may fail to contribute their fair share because of the fear their contribution will go unrecognized by the larger group. Thus, in order to form successful associations, large latent groups may require incentives to entice the participation of individual members. In order to mobilize potential members of large latent groups Olson proposes selective incentives. They can be either positive (separate services) or negative (coercion by compulsory membership). Obligatory membership can solve the free rider problem, with all members required to contribute to the provision of the collective good. As a result of successfully established association, collective good will be provided. Collective good provided by association has the two main characteristics: non-excludability and non consumers’ rivalry. So, if I use collective good (exemption from taxes and fees for cutting the trees), all the others will be able to use the same good without possibility to be excluded by others.

In addition to group size, several other group characteristics influence formation of associations, including: institutional and external influences (Matta and Alavalapati 2006; Gibson et al. 2005), cultural characteristics and mutual understanding (Ostrom et al. 1999), appropriate rules, subsidies, and training (McKean 1998). Clearly defined ownership boundaries and high levels of social capital also play an important role in initiating landowner associations (Gibson et al. 2005).

Beside selective initiatives, as Mendes et al. (2006) suggests certain triggering factors could be a solution to cope with free riders. Those factors can be political changes that demand mutual and not single reaction from those that are influenced by them (Mendes et al. 2006). Besides the triggering factor, critical mass is also an important factor, which depends on the production of common good, heterogeneity of a group and correlation of members and resource. However, triggering factors are insufficient to overcome free rider problem and coercion and financial selective incentives should be offered as a solution (Mendes et al. 2006).

Research Questions and Methodology

From the literature reviewed above we derived supportive and impeding factors influencing association formation. The most important supportive factors are: selective initiatives, reformulation of the existing legal acts related to private forests,

obligatory membership, trainings and the extension service. The most important impeding factors are fragmented forest holdings and numerous forest parcels, the large number of forest owners, cadastral problems, forest characteristics (coppice forest dominating in private ownership) and the restrictiveness of state regulation.

In order to explore the development of forest owner associations in Serbia we designed within the framework of the PRIFORT project a household survey. Our over-arching research questions were: “What is the level of interest among forest owners in forming owners’ associations?”; “Why has forest owner interest in organizing developed so slowly?” and “What are the necessary preconditions for the development of private forest owners’ organizations in the country?” There are several sub-questions related to these over-arching questions: “What are the perceived needs of forest owners related to owners’ associations?”; “What are their attitudes toward voluntary versus mandatory membership?”; “What are their opinions regarding state support of such associations/Regarding incentives for owner participation in associations/Regarding state forest policy?”.

The survey questionnaire addressed the supportive and impeding factors discussed above. The questionnaire consisted of 42 questions and included open, structured, and Likert scale questions (Glück et al. 2009), such as Q4: *Do you miss an interest association of private forest owners regarding forest management?*, where 5 potential responses were given: *very much*, *much*, *a little bit*, *not at all*, and, *I do not know*. The questionnaire was pre-tested on a sample of 14 forest owners and revised accordingly. In the period, from the middle of March to the end of April 2008 three researchers interviewed 350 forest owners in nine Serbian municipalities.

Because there is no comprehensive list of forest owners in Serbia a nation-wide simple random sample of owners was not possible. Cluster sample approach was designed based upon the assumption that the majority of forest owners, 60–70 percent, are missing interest representation. Accordingly we determined our sample size following the proportion method of Malhotra (2007), using the formula:

$$n = \pi(1 - \pi)z^2/D^2,$$

where n , sample size; π , assessed proportion of private forest owners not members of an owners’ association; D , set level of precision: $p - \pi = \pm 0.05$; P , true proportion of private forest owners not members of an owners’ association; Z , set level of confidence $CL = 95\%$; $z = 1.96$; for $\pi = 0.7$ $n = 0.7 \times 0.3 \times 1.96^2/0.05^2 = 323$; for $\pi = 0.6$ $n = 0.6 \times 0.4 \times 1.96^2/0.05^2 = 369$.

Taking the average of these two estimates, we chose a target sample size of 350 respondents. We developed a multistage cluster sample design in which every sampling element has an equal probability of being selected from the target population.

The sampling stages consisted of:

1. Eight municipalities throughout Serbia with both the highest percentage of forestland and the highest percentage of private forest ownership;
2. A random sample of 35 settlements in the above areas;
3. A random sample of 30–60 residents of these settlements;
4. A random sample of ten private forest owners from these residents.

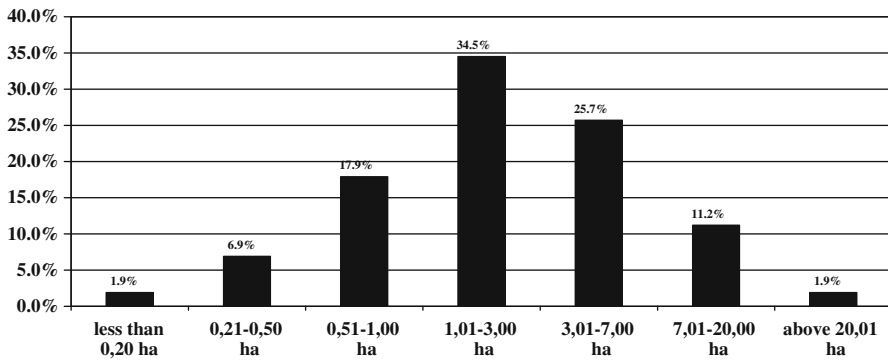


Fig. 1 Distribution of private forest ownerships by individual forest property size

Based on the limited data availability on private forest owners and the difficulty of contacting these owners due to their remote location and the lack of telephone or internet access in some areas, a door-to-door survey method was chosen as the most appropriate for this population. Questionnaires were answered by persons determined in step 4, described above, males and females; the criteria were that residents interviewed possess forest property. Response rate was 100%. The average time needed for interview completion was 40 min. All data procured by the interview were entered in a hard copy questionnaire form. Three hundred and fifty questionnaires were completed and usable. The data were processed in SPSS (SPSS *ver.* 16.0).

Results

Survey results fall into two categories: basic characteristics of private forests and their owners, and political factors related to the organizing process. In this paper, we present only results of the frequency distribution analysis, while results from other analyses are given in PRIFORT project reports and papers.²

Basic Characteristics of Private Forests Owners and Their Properties

Here, the structural, economic and production characteristics of private forest properties are presented. Basic social and demographic characteristics of private forest owners are also presented.

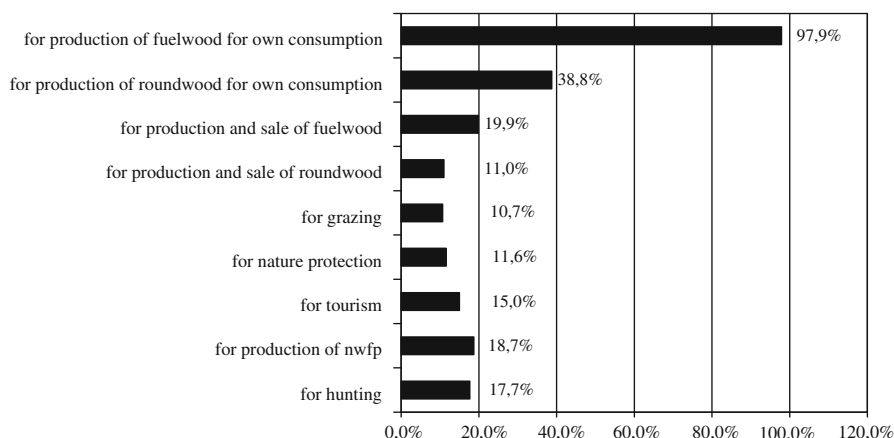
About 35% of all individual forest properties size is from 1 to 3 ha, while 27% of all individual properties are smaller than 1 ha, and 39% of properties are larger than 3 ha (Fig. 1).

As for other structural characteristics (Table 1), most private forests are coppice by origin, and are structured from broadleaved species.

² In PRIFORT project, following data analysis were applied: frequency distributions, cross-tabulation, correlation analysis, cluster analysis, factor analysis and non-parametric tests (Glück et al. 2009, 2010; Avdibegovic et al. 2010; Milijic et al. 2010).

Table 1 Other structural characteristics of private forest properties

Characteristic	Value/share
Average size of forest property (ha)	4.01
Number of forest parcels (%)	7.01
Average size of individual parcel (ha)	0.71
Forest origin	Coppice—64%
	High—19%
	Mixed—14
	Unknown—3%
Species composition	Coniferous—2%
	Broadleaved—88%
	Mixed—10%

**Fig. 2** The main use of forests

In study of economic and production characteristics of private forest properties, the respondents were asked for what purposes they held forestlands (Fig. 2).

About 98% of respondents hold their forest land in purpose of fuel wood production for their own consumption, and about 39% hold forestlands in purpose of round wood production for their own consumption. About 20% are using their forestlands in purpose of production of fuel wood for sale, and 11% in purpose of producing round wood for sale. Around 19% use their forests for production of non wood forest products, 18% for hunting and 15% for recreation and tourism. Around 11% of respondents hold their properties in purpose of nature protection and grazing.

About 81% of all interviewed forest owners perform harvesting in their forest property every year, while 10% do it occasionally. Around 9% of the interviewed owners do not cut trees in their forest properties.

Household income contribution of forest properties is presented in Table 2.

As for domestic use forest property contributes much for 37% and a little for 41% of the respondents. While in terms of wood for sale, almost one third of the

Table 2 Contribution of forests to owners' household incomes in terms of timber sale and domestic use

Use of wood	Very much (%)	Much (%)	Do not know (%)	A little (%)	Not at all (%)
Domestic use	13	37	0.6	41	8
Sale	3	5	30	17	44.5

respondents gave I do not know answer and for 45% of the respondents it does not contribute at all.

General socio-demographic characteristics of private forest owners are presented in Table 3.

Majority of forest owners are males aging from 40 to 60. Most of the interviewed owners live in proximity of their forest properties, in settlements with less than 5,000 inhabitants. Majority of owners have high school or lower level education, and only 6% have college or university education. Correspondingly to their sex, age, living environment and education, almost one third of the respondents are pensioners, and almost the same percentage are farmers, while about 14% are unemployed and 11% are workers. Around 7% are employees and almost the same percentage refers to entrepreneurs. Only 0.3% of forest owners participating in the survey are managers or higher level employees.

Political Indicators of Private Forest Owners' Organizing Process

In the following section, factors related to forest owners' attitudes toward forest legislation and their propensity for organizing, and partaking in the forest policy process are presented.

Forest Owners' Attitudes Toward Forest Legislation

Owners' attitudes toward forest legislation are presented in Table 4.

Most interviewed forest owners are very little or not at all aware of the existing legislation. And almost a half of the interviewed forest owners find the existing forest regulations a little or not at all severe, compared to the benefits their forest property provides.

Most pressing legal regulations are levies for timber harvests, permissions for harvesting by forest authorities, obligatory tree marking before harvesting and timber transport licenses.

Forest Owners' Propensity for Organizing

Forest owners' attitudes toward forest owners' organizations are presented in Table 5.

About 45% of the interviewed owners consider that forest owners' interests are not represented well. About 50% miss private forest owners' organizations in terms of forest management support and almost equal share miss forestry associations in terms of lobbying and interest representation. However, only 0.3% of the

Table 3 Socio-demographic characteristics

Characteristics	Share
Sex	Male—93% Female—7%
Age	Less than 20—0.3% 21–30—4% 31–40—13% 41–50—20% 51–60—29% 61–70—19% 71–80—12% More than 80—2%
Distance between the household and the forest property	Less than 5 km—67% 5–10 km—15% 10–20 km—9% 20–30 km—5% 30–50 km—3% More than 100 km—0.9%
Population of settlement owners live in	Less than 1,000 inhabitants—74% 1,001–5,000 inhabitants—11% 5,001–20,000 inhabitants—6% More than 20,001 inhabitants—9%
Formal level of education	Lower elementary school—12% Elementary school—30% Vocational school—10% High school—42% Vocational college 5% University—1%
Owners' occupation	Pensioner—31% Farmers—30% Unemployed—14% Workers—10.5% Employees—7% Entrepreneurs—7% Managers—0.3%

interviewed owners are members of forest owners' associations, and more than 70% of the interviewed owners are ready to join PFOAs if economic advantages for members are provided. On the other hand more than 50% of the interviewed owners strongly disagree with obligatory membership in forest owners' associations, and only 26% are ready to engage themselves in the establishment of PFOA in the region they live in.

Table 4 Forest owners' attitudes toward forest legislation

Attitude	Share
Awareness of forest legislation	Very much—6% Much—23% Do not know—3% A little bit—44% Not at all—23%
Most pressing regulations	Levies for timber harvest—53% Permission for harvesting—49% Tree marking—46% Obligatory management plans—15% Timber transport license—45%
Are regulations severe if compared to benefits forest property provides	Very much—8% Much—29% Do not know—21% A little bit—23% Not at all—19%

Discussion

There are no official Serbian statistical data on private forest parcel size distribution or forest owner demographics; the data set reported here is the largest known. This is the case especially regarding the data on an average size of private forest property: 4.01 ha, average number of forest parcels (7.1) and average size of the forest parcels (0.71 ha). The average size of individual forest ownership in Serbia is comparable to that of Central European: 2–4 ha (Wiersum et al. 2005).

More than 98% of the respondents use their forests for fuel wood production, which can be expected due to the large area of coppice forests. According to survey results, 63% of respondents own coppice forests. Apart from the significant share of fuel wood, used in most cases for own-consumption, a large share of forest owners, consider their forest properties significant sources of income. For more than 52% of forest owners, their forest properties are important for their own consumption, and for more than 38% of owners, sales of forest products is important. Thus, private forests may play an important role in poverty reduction in rural areas, as well as entrepreneurship development. This is especially the case as data on regular cuttings of fuel and round wood, originating from private forests, show that there are significant quantities intended for sale, since almost 20% of owners produce fuel wood for sale, and almost 11% of forest owners produce timber for sale.

The majority of forest owners (more than 60% of respondents) are older than 50 years of age. The majority are farmers (30%) or pensioners (31%), living in rural areas (74%), in most cases in the proximity of their forest properties. Majority of

Table 5 Owners' attitudes toward forest owners' organizations

Question	Answers
Are PFO interests represented well in Serbia?	Very much—3% Much—26% Do not know—27% A little—29% Not at all—15%
Do you miss PFOA for forest management?	Very much—% Much—42% A little bit—14% Not at all—21% Do not know—15%
Do you miss PFOA for lobbying?	Very much—9% Much—43% A little bit—15% Not at all—19% Do not know—14%
Are you a PFOA member?	Yes—0.3% No—99.7%
Under which conditions will you become a member of PFOA?	Economic advantages for members—73% Positive performance of PFOA—58% Independence of public forest administration—37% No or low membership fee—46%
Do you agree with obligatory membership in PFOA?	Strongly agree—7% Agree—21% Do not know—17% Disagree—42% Strongly disagree—12%
Are you prepared to engage yourself in the establishment of forest owners' interest association, in the region you live in?	Very much—5% Much—22% I do not know—8% A little—27% Not at all—39%

Serbian private forest owners are farmers. A significant percentage of forest owners in Serbia are unemployed as their share reaches 14%. For them the forest is a significant source of income.

A significant percent (about 68%) of forest owners claimed that they do not know their rights and obligations regarding forestry. This also means that professional and technical support to private forest owners provided by the public enterprise is not

directed to providing the needed information on legislation and other issues, but is only directed towards implementing obligatory activities such as tree marking by forest authorities. Heavy bureaucratic system was a characteristic of most post socialist countries and in some (e.g. Macedonia, Bosnia and Herzegovina, Croatia, Lithuania, etc....) it remained such (Mizaraite and Mizaras 2005; Glück et al. 2009). In addition high percentage of forest owners consider that obligations such as tree marking (46%), compensation for harvesting (53%) and license for cutting (49%) and timber transport (45%) issued by a forest authority are very much pressing. Such high negative response rate on certain legislative restrictions should be considered very important. The new Forest law has been adopted in 2010, but without important changes in these restrictions. However, a large number of forest owners (41%) do not consider overall legislative obligations severe, compared to benefits which their forest provides for them. A majority of forest owners (around 80%) agree that it would be most appropriate if a voluntary and independent national organization of forest owners would represent their interests. Majority of the interviewed private forest owners understand the role of PFOA and 52% of forest owners in Serbia miss the organization which will support them in forest management and interest representation. However, although private forest owners own more than 1 million hectares of forests there are only 20 local PFOAs established in Serbia which are members of the Serbian Federation of Private Forest Owners' associations.

Consequently, private forest owners are prepared to cooperate with each other in various activities, from joint usage of forest mechanization to joint work on forest roads construction and maintenance. In addition, the majority of private forest owners (74%) are prepared to join the existing private forest associations, but only if the associations provide certain economic benefits for their members. However, a large portion of private forest owners (39%) are not ready to engage themselves in the establishment and work of PFOA.

With respect to the number and basic social characteristics of private forest owners, Serbian owners are similar to owners in Central and Eastern European (Wiersum et al. 2005; Schraml 2005; Boon et al. 2004; Hegl et al. 2005; Ziegenspeck et al. 2004; Mizaraite and Mizaras 2005) and corresponding countries which do have developed forest owners' organizations. Therefore, those actually cannot explain for the small number of forest owners in their interest organizations in Serbia.

The historical heritage and political context have created a large number of private forest owners with small-sized forest lands who are reluctant to join their interest association according to Olson's theory of collective action. A large number of forest owners realize that they need an interest organization but the majorities are not ready to engage in the establishment of such an organization. In addition, the abundance of small and fragmented forest properties which cannot offer significant economic benefits reduces the chance of establishing an interest organization. It would appear that economic self-interest is the main driver of association formation; this claim is supported by the finding that the majority of forest owners are ready to join the organization only if that organization provides them with direct economic benefits.

Forest owners' organizations have been established for numerous reasons (Corten et al. 1999; Kittredge 2005; Schraml 2005; Schmidt 1994; Hodapp 1972; Brandl 1975; Nießlein 1976, 1992; Illyés and Niesslein 1997), and there are many organizational types. Even though owners share similar problems and needs, it is not easy to establish forest owners' interest organizations, and this is not the case just in Serbia. One of the most important elements in the origin of all forest owners' organizations is the role of the State in its establishment. As Kittredge claims, in almost all cases of forest owners' organizations development the State has a significant role, and forest owners' organizations were developed as a tool for fulfilling forest policy goals in private forests (Kittredge 2005). There are many examples of state support in the functioning of forest owners' organizations (Japan, Germany, France, Netherlands, Belgium), and in some countries (France, Netherlands), the State procures direct financial support for associations' members (Kittredge 2005). Corten claims that the ideal climate for the formation of forest owners' organizations occurs when the State creates conditions which stimulate private forest owners to take part in sustainable forest management, aiming not only at their personal benefits but the benefits of the whole society as well (Corten et al. 1999; Kittredge 2005). The same author claims that promotion of cooperation between private forest owners can lead to conflict avoidance and increased efficiency in forest management (Corten et al. 1999; Kittredge 2005). Apart from the clear political will to support forest owners in the formation of their organizations, most frequent forest owners' problems, however various they can be, can speed up the process of owners' cooperation and organizing (Kittredge 2005).

However, this is not the case in Serbia. It seems that after more than 10 years of democratic changes in Serbia have passed, the position of public forest administration and predominance of state forest enterprises have not been changed. This problem is especially related to the previous *Law on Forests* (1991), which limited property rights and did not prescribe any measures of support for private forest owners. One of the ways to encourage such a high number of potential members to establish their interest organization is providing positive selective initiatives in the form of private goods for association members. The new *Law on Forest* (2010) brings significant improvements in relation to property rights equality and support measures for private forest owners.

In the same period forest owners remained inactive and did not accept the concept of forest owners' organizations. This was the case in most Eastern European countries, because of the bad memories from the socialist period and the establishment of obligatory cooperatives (FAO 2000). This might be the case in Serbia as well.

Conclusions

The structure of private forest ownership in Serbia has been considered a significant problem for efficient management by the state forest administrations and state forest management enterprises (Nonic et al. 2008). Although a similar situation prevails in

most of Central and Eastern Europe (Mantau 1981; Ottitsch 2001; Kittredge 2003, 2005; Schraml 2005; Schlueter and Schraml 2006; Hirsch et al. 2007; Bouriaud 2007) new advantages of small-scale forestry and forest owners' organizations are being recognized throughout the world (Corten et al. 1999; Hoen et al. 2000; Bliss 2003; Rickenbach et al. 2004; Kittredge 2005; Bliss and Kelly 2008).

Organizations of private forest owners represent a potentially efficient forest policy instrument aimed at solving problems of small-scale forest management (Schraml 2005). However, although forest owners share similar problems and needs it is not easy to establish forest owners' interest organizations. Historical heritage and political surrounding influenced a number of private forest owners in Serbia to behave as free riders, in terms of Olson's *Theory of collective action*. It determined their behavior of not joining owners' interest organizations. One of the main problems in creating private forest owner interest association based on Olsons theory is huge number of private forest owners in Serbia. This situation is prevailing in many of Western Balkan countries. Such a big number of forest owners are impeding factor and stop them to invest their effort at begging of process in order to get collective good after the association is created. Collective good have characteristic to be: non-excludable and non rival in consumption. Successful creation of private forest owner interest association can be considered as public good for their members. Such association can later achieve collective good for their members such as: decreasing of state taxes, providing the subsidies etc. Private forest owners in Serbia now represent large group of people which rationally behaves and is not member of PFOA while disregard of membership in association they will receive public good such as: seedlings free of charge, road subsidies, etc. Beside PFO are large group of people some other characteristic, such as their heterogeneity, can be one of the possibility for initiating small group of people inside the group who can have larger interest for creating association such as charcoal producers or local fuel wood suppliers.

For the formation and successful development of forest owners' organizations, two basic conditions must be fulfilled: political will of the State to support the establishment and development of owners' organizations and the will of the owners to participate in the work of their organizations. Promotion of selective incentives (negative or positive) suggested by Olson's theory can be the first step in creating independent private forest owners association which can mobilize private forest interests towards state forest policy. In that sense private forest owners can become active partner in creating and implementing national forest policy and state can get in the same time reliable partner who gives legitimacy to the state institution in creation and implementation of national forest policy in Serbia. It is necessary to adjust public interests, proclaimed by the state to the owners' personal interests. Concrete reasons of association development may be different but in almost all cases without public and personal interest and creation of partnership relations between the State and the forest owners it is not possible to realize all the potentials of forest owners' organizations.

Problems of unresolved ownership relations, different legislative treatment of private forest owners and state forest enterprise have a very negative influence on the development of forest owners' organizations in all countries in transition.

Sometimes the state is not capable or willing to support the development of forest owners' organizations. Sometimes, even if there is will to support forest owners' organizations and mechanisms to provide planned support, legislation that is unadjusted to development strategy slows down or sometimes makes it impossible to develop the existing organizations and establish new ones. This is the case in Serbia, where inconsistencies of the existing Forest Law (1991) and Forest Development Strategy (2006) are present, especially in parts related to private forest owners. That can explain for such a small number of forest owners in Serbia, who try to achieve their interest by participating in private forest owners' organizations.

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